

AD-A283 556



NAVAL WAR COLLEGE
Newport, R.I.

**OPERATIONAL ART AND LOGISTICS: ACHIEVING EXCELLENCE IN THE DESIGN
AND CONDUCT OF MILITARY CAMPAIGNS**

by

Mark S. McTague

Lieutenant Colonel, United States Marine Corps

DTIC
ELECTE
AUG 17 1994
S G

A paper submitted to the Faculty of the Naval War College in partial satisfaction of the requirements of the Joint Military Operations Department.

The contents of this paper reflect my own personal views and are not necessarily endorsed by the Naval War College or the Department of the Navy.

Signature: *Mark S. McTague*

17 June 1994

Paper directed by
Captain D. Parker, USN
Chairman, Joint Military Operations Department
Captain D. Scott Ensminger, SC, USN
Military Chair of Logistics

Approved by:

D. Parker

Faculty Research Advisor

5/16/94
Date

2886 94-25941



DTIC QUALITY INSPECTED 1

94 8 16 121

REPORT DOCUMENTATION PAGE

| | | | | | |
|---|-------|---|--|---|----------------------------|
| 1a. REPORT SECURITY CLASSIFICATION UNCLASSIFIED | | | 1b. RESTRICTIVE MARKINGS | | |
| 2a. SECURITY CLASSIFICATION AUTHORITY | | | 3. DISTRIBUTION / AVAILABILITY OF REPORT DISTRIBUTION STATEMENT A: APPROVED FOR PUBLIC RELEASE; DISTRIBUTION IS UNLIMITED. | | |
| 2b. DECLASSIFICATION / DOWNGRADING SCHEDULE | | | 5. MONITORING ORGANIZATION REPORT NUMBER(S) | | |
| 4. PERFORMING ORGANIZATION REPORT NUMBER(S) | | | 7a. NAME OF MONITORING ORGANIZATION | | |
| 6a. NAME OF PERFORMING ORGANIZATION OPERATIONS DEPARTMENT | | 6b. OFFICE SYMBOL (If applicable) C | 7b. ADDRESS (City, State, and ZIP Code) | | |
| 6c. ADDRESS (City, State, and ZIP Code) NAVAL WAR COLLEGE NEWPORT, R.I. 02841 | | 9. PROCUREMENT INSTRUMENT IDENTIFICATION NUMBER | | | |
| 8a. NAME OF FUNDING / SPONSORING ORGANIZATION | | 8b. OFFICE SYMBOL (If applicable) | 10. SOURCE OF FUNDING NUMBERS | | |
| 8c. ADDRESS (City, State, and ZIP Code) | | PROGRAM ELEMENT NO. | PROJECT NO. | TASK NO. | WORK UNIT ACCESSION NO. |
| 11. TITLE (Include Security Classification) OPERATIONAL ART AND LOGISTICS: ACHIEVING EXCELLENCE IN THE DESIGN AND CONDUCT OF MILITARY CAMPAIGNS | | | | | |
| 12. PERSONAL AUTHOR(S) MCTAGUE, MARK S., LTCOL, USMC | | | | | |
| 13a. TYPE OF REPORT FINAL | | 13b. TIME COVERED FROM TO | | 14. DATE OF REPORT (Year, Month, Day) 940617 | |
| 15. PAGE COUNT 27 | | | | | |
| 16. SUPPLEMENTARY NOTATION A paper submitted to the Faculty of the Naval War College in partial satisfaction of the requirements of the Department of Operations. The contents of this paper reflect my own personal views and are not necessarily endorsed by the Naval War College or the Department of the Navy. | | | | | |
| 17. COSATI CODES | | | 18. SUBJECT TERMS (Continue on reverse if necessary and identify by block number) | | |
| FIELD | GROUP | SUB-GROUP | OPERATIONAL ART AND LOGISTICS ACHIEVING EXCELLENCE IN THE DESIGN AND CONDUCT OF MILITARY CAMPAIGNS | | |
| | | | | | |
| | | | | | |
| 19. ABSTRACT (Continue on reverse if necessary and identify by block number) This paper examines the essential elements of operational art and the vital role logistics serves in realizing the benefits of operational art. the operational art and logistic issues discussed in this paper are examined against the backdrop of Operation Restore Hope. This paper focuses on the military activity of campaigning - the thesis of this paper follows. The operational level of war is waged by commanders who plan, organize, conduct, and sustain campaigns or major operations to achieve strategic objectives. Deciding when, where, and for what purpose military forces will be employed within a theater to achieve strategic aims is the very essence of operational art. Operational logistics is an enabling function of operational art - logistics assists the commander in achieving focus, opportunity, and flexibility in the design and conduct of campaigns. | | | | | |
| 20. DISTRIBUTION / AVAILABILITY OF ABSTRACT <input checked="" type="checkbox"/> UNCLASSIFIED/UNLIMITED <input type="checkbox"/> SAME AS RPT. <input type="checkbox"/> DTIC USERS | | | 21. ABSTRACT SECURITY CLASSIFICATION Unclass | | |
| 22a. NAME OF RESPONSIBLE INDIVIDUAL CHAIRMAN, OPERATIONS DEPARTMENT | | | 22b. TELEPHONE (Include Area Code) 841-3414 | | 22c. OFFICE SYMBOL C |

Abstract of
**OPERATIONAL ART AND LOGISTICS: ACHIEVING EXCELLENCE IN THE DESIGN
AND CONDUCT OF MILITARY CAMPAIGNS**

This paper examines the essential elements of operational art and the vital role logistics serves in realizing the benefits of operational art. The operational art and logistic issues discussed in this paper are examined against the backdrop of Operation Restore Hope. This paper focuses on the military activity of campaigning - the thesis of this paper follows. The operational level of war is waged by commanders who plan, organize, conduct, and sustain campaigns or major operations to achieve strategic objectives. Deciding when, where, and for what purpose military forces will be employed within a theater to achieve strategic aims is the very essence of operational art. Operational logistics is an enabling function of operational art - logistics assists the commander in achieving focus, opportunity, and flexibility in the design and conduct of campaigns.

| | |
|---------------------|--|
| Accession For | |
| NTIS CRA&I | <input checked="checked" type="checkbox"/> |
| DTIC TAB | <input type="checkbox"/> |
| Unannounced | <input type="checkbox"/> |
| Justification | |
| By | |
| Distribution / | |
| Availability Codes | |
| Dist | Avail and/or Special |
| A-1 | |

TABLE OF CONTENTS

| CHAPTER | PAGE |
|--|------|
| ABSTRACT | ii |
| I INTRODUCTION | 1 |
| Purpose | 1 |
| Methodology | 1 |
| Thesis | 2 |
| II CONCEPTUAL FRAMEWORK | 3 |
| Scope | 3 |
| The Operational Level of War and Operational Art .. | 3 |
| Operational Logistics | 4 |
| Operation Restore Hope: An Overview | 5 |
| III CAMPAIGNING: LINKING OPERATIONAL ART AND OPERATIONAL LOGISTICS | 8 |
| General | 8 |
| Towards the Operational End State | 8 |
| Phasing Campaigns | 11 |
| Applying Resources to Support Campaign Phasing ... | 13 |
| Campaign Phasing: Assessing its Costs and Risks .. | 16 |
| IV CONCLUSIONS | 19 |
| NOTES | 21 |
| BIBLIOGRAPHY | 23 |

OPERATIONAL ART AND LOGISTICS: ACHIEVING EXCELLENCE IN THE DESIGN AND CONDUCT OF MILITARY CAMPAIGNS

CHAPTER I

INTRODUCTION

Purpose

This paper examines the essential elements of operational art and the vital role logistics serves in realizing the benefits of operational art. I focus principally on the military activity of campaigning - my intent is explain how operational-level commanders achieve strategic objectives through the design and conduct of campaigns. Particular emphasis is given to a critical aspect of campaigning - operational logistics.

Methodology

The operational art and logistic concepts and issues discussed in this paper are examined against the backdrop of a recent United States-led joint/combined military campaign - Operation Restore Hope. This major humanitarian relief effort was categorized as an "operation short of war." Yet, this operation presented numerous war-like challenges to operational-level commanders and logisticians alike. The lessons learned from Operation Restore Hope serve to effectively validate the thesis of this paper.

Thesis

The operational level of war is waged by commanders who plan, organize, conduct and sustain campaigns or major operations to achieve strategic objectives. Activities at this level of war are not governed by scientific principles or theories - operational-level commanders must view their efforts more as an art form. Deciding when, where, and for what purpose military forces will be employed within a theater to achieve strategic aims is the very essence of operational art. Logistics plays a pivotal role in operational art - to a large extent, logistics dictates what is operationally feasible.

Operational logistics is a critical aspect of operational art - it assists operational-level commanders in addressing one of their most basic responsibilities - the prioritization and allocation of resources in the most efficient and effective manner to achieve strategic objectives. Operational logistics promotes focus, opportunity and flexibility - it is an "enabling" activity - it defines the art of the possible.

CHAPTER II

CONCEPTUAL FRAMEWORK

Scope

This chapter briefly explores the concepts of operational art and operational logistics to set the stage for the detailed analysis contained in the next chapter. A summary of Operation Restore Hope is also provided as background.

The Operational Level of War and Operational Art

The operational level of war is fought primarily by theater and component commanders who employ military forces to conduct campaigns or major operations to achieve theater strategic objectives. Military force is not the only instrument of power operational-level commanders employ - politics and diplomacy, economics, and psychology demand attention and understanding as well.¹

The operational level of war would be easier to master if its activities were governed solely by scientific principles or laws. Unfortunately, its activities are characterized by a high degree of violence, uncertainty, risk, friction and limited resources. For these reasons, operational-level commanders view the design and conduct of campaigns or major operations more as an art form and less as a science. Understandably, activities at this level of war are appropriately called operational art.²

Mastery of operational art requires commanders to address

four basic questions: (1) What military conditions will achieve the desired end-state?, (2) What sequence of actions are necessary to achieve these conditions?, (3) How should available resources be applied in the most effective and efficient manner to accomplish that sequence of actions?, and (4) What are the likely risks and costs in performing that sequence of actions?.'

Operational Logistics

Like the levels of war, logistics is often categorized in three levels: strategic, operational, and tactical. Strategic logistics involves the development, acquisition and positioning of war materials to support military forces - it includes their movement from the United States and intermediate staging bases to various theaters. At the opposite end of the spectrum is tactical logistics - it is concerned with sustaining forces in combat. Tactical logistics involves the performance of combat service support functions with resources that are immediately or imminently available.'

Operational logistics consists of activities required to support forces in campaigns and major operations within a theater of operations. Examples of key operational logistic activities include: the reception, staging and onward movement of personnel, equipment and supplies from the theater communication zone to combat zones; the evacuation and temporary hospitalization of casualties; and the establishment of a joint theater logistic system which includes lines of communication, installations,

logistic units, and host-nation support.⁵ "Operational logistics must furnish resources sufficient to ensure continuity of operations through all phases of a campaign."⁶

Operational logistics is an art form in its own right. As a discipline, it must resolve the tension between the competing logistic principles of efficiency and effectiveness. Strategic logistics capitalizes on the benefits of standardization, uniformity, predictability, and economy of scale. Tactical logistics is best suited to a system that promotes flexibility, responsiveness, simplicity, and survivability.⁷ "Bridging the gap between those two great E's - the efficiency of strategic logistics and the effectiveness of tactical logistics - is the challenge of the operational logistics art."⁸ Balancing current consumption with the need to build up logistics support for subsequent campaign phases or operations, lengthening the lines of communication, and staging logistic support forward to maintain the tempo of operations are some of the more challenging tasks for operational logisticians.

Operation Restore Hope: An Overview

On 3 December 1992, the United Nations (U.N.) Security Council passed Resolution 794, approving the use of "all necessary means to establish as soon as possible a secure environment for humanitarian relief operations in Somalia."⁹

On 4 December, President Bush announced to a startled nation his decision to commit military forces to Somalia to prevent the

further starvation and devastation of a society being ripped apart by a vicious cycle of clan warfare, famine, and banditry. His stated goal was to establish a secure environment within the country that would allow for the orderly flow of food to a starving populace. The President envisioned the mission to have a limited objective - "to open the supply routes, to get the food moving, and to prepare the way for a UN peacekeeping force to keep it moving."¹⁰ The effort was termed Operation Restore Hope.

The United States-led United Task Force (UNITAF) commenced operations on 9 December. Although the United Nations had already headquartered its own organization (termed the UN Operation in Somalia (UNOSOM)) in Mogadishu, the UNITAF received its orders from the Commander-In-Chief (CINC), Central Command (CENTCOM).

By the end of December, 21,000 United States personnel and 7,000 troops from 22 nations were deployed in designated humanitarian relief sectors throughout the southern portion of Somalia. The United States forces were organized along service lines, called service component commands. The nucleus of the UNITAF staff was formed from the headquarters element of the I Marine Expeditionary Force - the UNITAF staff also received personnel augmentation from each of the other services.¹¹

Operation Restore Hope was an operation of immense logistics proportions - nothing prepared the logisticians for the utter devastation and social chaos that greeted them as they arrived in theater. Somalia was logistic planner's worst nightmare, the

country's infrastructure was systematically destroyed after two years of civil war - there was no electricity, no water, no fuel, no food, no government, and no economy within Somalia. General Hoar, CENTCOM'S CINC, remarked, "Deploying to Somalia was like going to the moon: everything needed had to be brought in or built there."¹²

CHAPTER III

CAMPAIGNING: LINKING OPERATIONAL ART AND OPERATIONAL LOGISTICS

General

The campaign is the ultimate expression of operational art - it is the principal tool operational-level commanders employ to achieve the theater strategic objective. The design and conduct of campaigns is usually under the direction of either: a warfighting CINC, a sub-unified theater CINC, or a theater joint force commander. Campaigns are joint - they synchronize air, land, sea, space, and special operations forces to accomplish a theater strategic objective.¹³

Towards the Operational End State

A theater or joint force commander's primary responsibility when planning and executing a military campaign is to ensure that he defines the military conditions necessary to achieve the theater strategic goal. In other words, he must clearly articulate the campaign's end state. The end state defines conditions for operational success and, in turn, achievement of the strategic aim.¹⁴

Implicitly, operational success is gained in increments, one intermediate objective at a time or through the realization of multiple objectives concurrently. To achieve the end state, the commander must provide focus - tactical battles or operations, no matter how independently successful, are meaningless unless they

contribute to a campaign's end state. The commander articulates his vision in a campaign plan. The campaign plan is based upon the commander's concept.¹⁵

The theater strategic objective for Operation Restore Hope was to create a secure environment in the hardest-hit parts of Somalia so that food and other humanitarian aid could move freely from ports of debarkation to the people in the countryside devastated by starvation and disease. The operation's end state was to be reached when UNITAF forces broke the cycle of famine, looting, and banditry within the humanitarian relief sectors - establishing a system secure enough to turn over to U.N. peacekeeping forces. For the most part, UNITAF stayed very focused on Restore Hope's end state - what proved difficult, however, was the development of relevant measures of effectiveness for end state attainment. Effectiveness turned out to be a matter of perspective.¹⁶

Identification and attack of the enemy's (or antagonist's) center of gravity greatly contributes to operational focus. Center of gravity is that "characteristic, capability, or location from which alliances, nations, and military forces derive their will to fight, their physical strength, or freedom of action."¹⁷ If possible, the enemy's strength should not be attacked directly. The enemy's vulnerabilities present opportunities for exploitation - essentially, the indirect approach is best means to get at his center of gravity.¹⁸

Somalia did not have any form of functioning government or

armed forces and it was difficult to identify, in the classical sense, the "enemy's" center of gravity and corresponding critical vulnerabilities. CINCCENT identified the antagonist's center of gravity to be the ability of the gangs and rival clans to intimidate and threaten food distribution efforts, most notably in the capital city of Mogadishu. Their vulnerabilities included their lack of heavy weapons and small force levels - hence, their inability to disrupt heavily armed UNITAF food distribution efforts.¹⁹

Operational logistics is an enabling function to assist commanders in achieving a campaign's end state. It is a discipline much like the other theater-level activities of command and control, maneuver, operational reconnaissance and intelligence, operational protection, and operational fires - each offers the commander great potential for success or failure. If properly planned and executed, logistics can promote focus, opportunity, and operational flexibility - if it is poorly planned and executed, commanders will view logistics as a liability.²⁰

In Operation Restore Hope, operational logistics proved to be the pivotal factor in determining where and when UNITAF forces were able to focus against their antagonist's center of gravity. General Johnston commented, "You have to realize that my mission is to get as many troops ashore as quickly as we can with the ability to sustain them logistically, and then move in a very deliberate manner to assume control of those relief sectors."²¹

UNITAF logisticians, mindful of the need to build-in operational flexibility and responsiveness into their planning, did not fully appreciate at the time the extent to which their logistical art skills were to be tested. A combination of political influences, service sensitivities, media pressures, operational friction, and mission uncertainties all contributed to significant changes in mission planning and execution. As a result, major changes were made in force sequencing time-tables; force-mix ratios between combat, combat support, and combat service support units; service-mix ratios; and coalition support assumptions." Logisticians aggressively sought a voice in these mission deliberations and were able to influence, to a small degree, the work-around plans to accommodate these changes - their ultimate goal was to ensure logistics continued to be an enabler, not a liability.

Phasing Campaigns

Campaign phasing is an essential aspect of operational art. Phasing permits the operational-level commander to organize the extended and dispersed activities of the campaign into more manageable parts - they give the theater commander flexibility in execution. Phases are generally designed to accomplish one or more intermediate goals - each goal has meaning only as it relates to the accomplishment of the overall theater strategic objective.

Phases may occur simultaneously as well as sequentially.

Phases assist the commander in the effective integration of joint and combined forces - frequently, the operational commander will specify the main and supporting efforts within each phase. Transition from one phase to another should not be governed by a stopwatch or calendar - instead, phases should be event or condition-oriented.²³

Operation Restore Hope was a campaign divided into four phases. Phase I called for the Marines, performing their role as an enabling force, to seize, secure, and establish a Mogadishu-based logistic hub. Phase II required joint/coalition forces to establish humanitarian relief sectors centered at key cities outside the capital. Phase III called for expanded security and escort operations within each sector and Phase IV was the turnover of all relief operations to the United Nations.²⁴

To operational logisticians, campaign phasing is an essential prerequisite to mission accomplishment. Phasing permits staff planners to effectively and efficiently employ limited personnel, equipment, and material resources to accomplish essential intermediate objectives. Within phases, forces should not be allowed to abruptly or unintentionally reach their operational and logistical culmination points - staff planners should recommend to the commander the time, place, and/or pre-conditions for operational pauses. Operational pauses are usually required after the achievement of the phase's key operational objective.²⁵

From the very beginning of Operation Restore Hope, UNITAF

received tremendous and unrelenting pressure from the chain of command and the international media to accelerate its operations throughout the southern part of Somalia. General Johnston had to repeatedly refer back to the phased campaign plan to emphasize that his operation was not linked to a time table or calendar - each phase, he indicated, had a purpose and a set of pre-conditions for transition to the next phase. In the final analysis, he was only partially successful in sticking to his own plan. When he was forced to accelerate operations, the logistical situation within the theater became extremely tenuous. At times, joint/combined forces had to significantly curtail their operations due to the lack of adequate logistical support - the theater logistics system simply could not keep pace with the supported forces.²⁶

Applying Resources to Support Campaign Phasing

Organizing, prioritizing, and allocating resources within a phased campaign to achieve a theater strategic objective is perhaps the most difficult aspect of operational art. Although basic personnel, equipment, and material resource decisions are made prior to initiating a campaign, the commander will be required to continually update and modify his plans as the operation unfolds.

To achieve a common, well understood chain of command theater and operational-level commanders organize their forces into functional and/or service components. The commander can

employ any one or a mix of command relationship options identified in Joint Pub 0-2 (COCOM, OPCON, TACON, and support) - command relationships are used to "adapt the organization of assigned forces to situational requirements and arrange component operations in time, space and purpose."²⁷ Also, by establishing supported and supporting relationships between components, the theater commander can achieve greater unity of effort and focus within a given campaign phase.

Making resource prioritization and allocation decisions constitutes one of the theater commander's most vital responsibilities. For the most part, these decisions involve the joint force as a whole. The commander must decide how he plans to employ his limited theater assets across the battlespace continuum - integration and synchronization of his joint forces will promote the synergistic effect he desires and it will enable him to control the timing and tempo of his campaign.²⁸

Resource availability within the theater of operations is mostly a function of time - deployment schedules, sustainment rates, operational pause periods, and aircraft sortie rates are but few of many examples. During planning and execution the operational-level commander and staff must reconcile the time-oriented phasing of resources with the event-oriented phasing of operations - hence, the critical value of phasing.²⁹

A large share of the resource prioritization and allocation decisions that a theater commander must make directly involve the activity of logistics. Joint operational logistics is the

responsibility of the CINC. "He applies logistic resources to generate, produce, and support theater combat power."³⁰ The CINC uses directive authority for logistics to ensure effectiveness and economy in operations. He also uses it to prevent or eliminate the unnecessary duplication of facilities and the overlap of functions among the theater component commands.

Although component commanders are responsible for their own logistic support, the CINC may decide that certain logistic services will be provided to the entire joint force by a specific component. For example, it is common for one service to handle the theater storage, transportation and distribution of all common petroleum products.³¹

Operation Restore Hope was a campaign that demanded unexpected, innovative, and continuous logistic resource prioritization and allocation decisions by the task force commander and staff.

Within three days after Marine forces began to flow into the theater to back-up the on-scene Marine Expeditionary Unit, a decision was made by the CINC to accelerate the introduction of Army units into the theater. Almost immediately, 10th Mountain Division units began arriving. Unfortunately, because of other competing priorities, their combat support and combat service support elements maintained their original place in the deployment cycle. The UNITAF commander sought and gained the authority from CINCCENT to redistribute Marine Corps equipment and supplies to arriving Army units. Later, this same expediency

was used to support arriving coalition forces. Clearly, these were cases of a unified task force commander making resource allocation decisions that were for the good of the joint/combined force as a whole - the individual service needs were of secondary concern.³²

Campaign Phasing: Assessing its Costs and Risks

Successful operational-level commanders understand risk to be an unavoidable consequence of military campaigns. Operational art requires commanders to design and conduct campaigns in such a manner as to minimize the effects of risk. Risk is something to be anticipated, but not feared. Operational experience and wisdom should dictate the difference between acceptable risks and unacceptable gambles.

Much can be done by the commander to minimize risk when planning campaigns. Nothing can replace the benefits of deliberate planning - comprehensive mission analyses, sound and distinctly different courses of action, balanced estimates of supportability, statements of commanders intent, and clear concepts of operation are all essential ingredients for success. Simplicity is the watchword for campaign planning, especially when the joint force is augmented by coalition forces - simple plans, in themselves, do not avert risk, but simple, clear and concise plans are easier to execute and they minimize confusion.

Operational and logistical planners need to develop mechanisms for measuring successful accomplishment of objectives

within each phase of the campaign - this is a critical step in risk management. If a commander and staff do not define operational success and fail to take steps to measure effectiveness of their actions, then the entire campaign stands a greater risk of failure or delay in mission accomplishment.

Assumptions are developed during campaign planning to document the degree of uncertainty governing the enemy, battlespace, and environment. By the time a plan is translated into an operations order key assumptions, to the maximum extent possible, should be either validated or discarded. Unresolved assumptions directly contribute to an operational environment of increased risk. Commanders should carefully track assumptions throughout the planning cycle and ensure that approved courses of action are not tied to too many assumptions.

Logisticians participate in the development of alternative and follow-on plans as part of the overall campaign plan - these contingency plans are called branches and sequels. "Branches are contingency plans - operations built into the basic plan - for changing the disposition, orientation, or direction of movement and also for accepting or declining battle. Sequels are subsequent operations on the possible outcomes of the current operations ..."³³ Branches and sequels serve to minimize risk - they provide flexible options to the commander.

Operation Restore Hope was a campaign executed in an environment of great uncertainty, risk, and violence. General Johnston and his staff employed all the operational art

techniques and considerations noted above, and more, to minimize risk to his joint/combined forces. He defined a precise mission statement and commander's intent, he established an end state with measurable and attainable objectives, and he published a clear and comprehensive concept of operations. UNITAF's future operations cell developed and continually refined branches and sequels to the campaign plan to meet unexpected contingencies."

Operational logisticians from the UNITAF and service component staffs provided General Johnston with a theater logistics system that possessed sufficient flexibility and responsiveness to respond to whatever operational uncertainties and risks arose."

CHAPTER IV

CONCLUSIONS

The conclusions listed below have been drawn from the operational art and logistic concepts and issues discussed in Chapters II and III of this paper.

* Future wars, including military operations other than war, will continue to be characterized by great uncertainty, friction, risk and violence. Operational-level commanders will not be able to lead joint/combined forces in military campaigns guided solely by scientific principles or tactical techniques - the battlefield is simply too complex. Instead, operational success will be possible only if commanders expand their thinking beyond the tactical level of war and grasp the essential elements of operational art.

* The design and conduct of military campaigns is the essence of operational art. The operational-level commander's most important planning duty is to determine the campaign's end state. By doing so, the commander defines the necessary conditions for operational success which, in turn, implicitly leads to the achievement of the strategic objective.

* Operational logistics influences every aspect of the campaigning process. To a large extent, operations' logistics

dictates what is operationally feasible within campaign phases. Campaign plans conceived in isolation of logistic planners will, at worst, lead to failure and, at best, assume far greater risk than acceptable. Operational logistics should not be viewed by the commander as a constraint. Instead, it is an enabling activity much like the other operational-level activities such as operational fires and protection. Properly planned and integrated with operations, logistics promotes focus, opportunity, and operational flexibility.

NOTES

1. Joint Pub 3-0, Doctrine For Joint Operation (Washington: Joint Staff, 1993), pp. II-3 - II-5.

2. John F. Meehan III, "The Operational Trilogy," Parameters, Autumn, 1986, pp. 12-17.

3. Joint Pub 3-0, p. II-4.

4. Joint Pub 4-0, Doctrine For Joint Logistic Support of Joint Operations, (Washington: Joint Staff, 1992), pp. I-1 - I-14.

5. AFSC Pub 2, Service Warfighting Philosophy and Synchronization of Joint Forces, (Norfolk, VA: Armed Forces Staff College, 1992), pp. II-5-C-1 to 12.

6. AFSC Pub 2, p. II-5-C-1.

7. Martin Van Creveld, Supplying War: Logistics from Wallenstein to Patton (Cambridge: Cambridge University Press, 1977), pp. 231-237.

8. James A. Brabham, "Operational Logistics: Defining the Art of the Possible," Marine Corps Gazette, April, 1994, P. 26.

9. Walter S. Clarke, "Testing the World's Resolve in Somalia," Parameters, Winter 1993-94, p. 47.

10. Ken Menkhaus and Terrence Lyons, "What Are the Lessons To Be Learned from Somalia," CSIS Africa Notes, January, 1993, p. 4.

11. Joseph P. Hoar, "A CINC's Perspective," Joint Force Quarterly, Autumn, 1993, pp. 56-59.

12. Ibid., p. 60.

13. Joint Pub 1, Joint Warfare of the US Armed Forces, (Washington: Joint Staff, 1991), pp. 45-48.

14. Meehan III, pp. 14-16.

15. FMFM 1-1, Campaigning, (Washington: Headquarter United States Marine Corps, 1990), pp. 31-51.

16. Robert B. Oakley, "An Envoy's Perspective," Joint Force Quarterly, Autumn, 1993, pp. 45-51.

17. Lawrence L. Izzo, "The Center of Gravity is Not an Achilles Heel." Military Review, January 1988, p. 75.

18. FMFM 1-1, p. 37.

19. Hoar, p. 59.

20. FM 100-5, Operations, (Washington: Headquarters Department of the Army, 1993), pp. 12-2 to 12-12-10.

21. "With all Deliberate Speed." Government Executive, February, 1993, p. 32.

22. Waldo D. Freeman, "Operation Restore Hope: A US CENTCOM Perspective," Military Review, September, 1993, pp. 64-72.

23. FM 100-5, p. 6-9.

24. Hoar, pp. 56-63.

25. AFSC Pub 2, pp. II-5-C-1 to 12.

26. Mark S. McTague, "Operation Restore Hope: Logistics Once Again Defines the Possible," Unpublished Research Paper, U.S. Naval War College, Newport, RI: 1993, pp. 1-18.

27. Joint Pub 3-0, p. II-7.

28. Meehan III, pp. 9-17.

29. FMFM 1-1, pp. 45-47.

30. AFSC Pub 2, p. II-5-C-4.

31. Ibid., pp. II-5-C-4 to 7.

32. McTague, pp. 12-18.

33. FM 100-5, p. 6-9.

34. Oakley, pp. 44-55.

35. McTague, pp. 12-18.

BIBLIOGRAPHY

- Adams, Dwight L. and Newell, Clayton R. "Operational Art in the Joint and Combined Arenas." Parameters, June 1988, pp.33-38.
- AFSC Pub 2. Service Warfighting Philosophy and Synchronization of Joint Forces. Norfolk, VA: Armed Forces Staff College, 1992, Chapter 5.
- Antal, John F. and Dunaway, Robert L. "Peacekeeping in Somalia: A Background Brief." Marine Corps Gazette, February 1993, pp. 38-43.
- Arnold, S. L. and Stahl, David T. "A Power Projection Army in Operations Other Than War." Parameters, Winter 1993-1994, pp. 4-25.
- Brabham, James A. "Operational Logistics: Defining The Art of the Possible." Marine Corps Gazette, April 1994, pp. 26-31.
- "Combat Service Support in Somalia." Marine Corps Gazette, November 1993, pp. 78-88.
- Clark, Jeffrey. "Debacle in Somalia." Foreign Affairs, Special Edition 109-63, 1993, pp. 109-123.
- Clarke, Walter S. "Testing the World's Resolve in Somalia." Parameters, Winter 1993-94, pp. 42-57.
- Crevald, Martin Van. Supplying War. Cambridge: Cambridge University Press, 1977.
- Director, Procurement Division, War Dept General Staff. Logistics in World War II: Final Report of the Armed Services. Washington: Government Printing Office, 1992.
- Eccles, Henry E. Logistics in the National Defense. Harrisburg, PA: The Military Service Publishing Company, 1959.
- FM 100-5. Operations. Washington: Headquarters Department of the Army, 1993.
- FMFM 1-1. Campaigning. Washington: Headquarters United States Marine Corps, 1990.
- Freeman, Waldo D. "Operation Restore Hope: A US CENTCOM Perspective." Military Review, September 1993, pp. 61-72.
- Hall, George M. "Culminating Points." Military Review, July 1989, pp. 79-86.
- Hoar, Joseph P. "A CINC's Perspective." Joint Force Quarterly,

Autumn 1993, pp. 56-63.

Izzo, Lawrence L. "The Center of Gravity is Not an Achilles Heel." Military Review, January 1988, pp. 72-77.

Joint Pub 1. Joint Warfare of the US Armed Forces. Washington: Joint Staff, 1991.

Joint Pub 3-0. Doctrine For Joint Operations. Washington: Joint Staff, 1993.

Joint Pub 4-0. Doctrine For Logistic Support of Joint Operations. Washington: Joint Staff, 1992.

Mallette, Rodney A. "Logistics for U.N. Peacekeeping Operations." Army Logistician, January-February 1994, pp. 22-24.

Meehan III, John F. "The Operational Trilogy." Parameters, Autumn 1986.

Menkhaus, Ken. "What Are The Lessons To Be Learned From Somalia?" CSIS Africa Notes, January 1993, pp. 1-10.

Oakley, Robert B. "An Envoy's Perspective." Joint Force Quarterly, Autumn 1993, pp. 44-55.

Oberthaler, David P. "An Introduction to Operational Logistics and Sustainment." NWC 3131. Newport, RI: Naval War College, 1993.

Pagonis, William G. and Cruikshank, Jeffrey L. Moving Mountains: Lessons in Leadership and Logistics from the Gulf War. Boston, MA: Harvard Business School Press, 1992.

Sisk, James E. "Logistics in Operations Other Than War." Army Logistician, January-February 1994, pp.9-11.

Thompson, Julian. The Lifeblood of War: Logistics in Armed Conflict, London: Brassey's (UK), 1991.

Thorpe, George C. Pure Logistics: The Science of War Preparation, Quantico, VA: Marine Corps Association, 1992.